

AI Legal Responsibility and Accountability: Reframing Legal Responsibility in the Age of Autonomous Systems

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Abstract

Rapid technological change and development have given rise to a new era characterized by advanced Artificial Intelligence (AI) technology and applications. These innovations bring numerous positive effects, such as enhancing productivity, reducing operational errors, increasing efficiency across industries, improving healthcare delivery, supporting climate change mitigation, boosting agricultural output, and strengthening security; However, alongside these advancements come significant negative outcomes. This rapid progress raises critical questions about AI control, accountability, and liability. Like any human creation, AI is not without flaws, it is prone to bias, errors, security vulnerabilities, and increasing autonomy, all of which pose significant legal and ethical challenges related to responsibility and risk. The complexity of advanced AI system characterized by autonomous behavior and lack of predictability as well as continuous learning makes it difficult to determine how harm occurs and who is accountable. Traditional legal concepts like breach, defect and causation are often difficult to apply to AI. Furthermore, the involvement of multiple actors in the design, development, deployment, and operation of AI systems make it difficult to assess who is legally liable when something goes wrong. This article aims to examine the existing status on legal responsibility and the shifting patterns of legal liability for failures that result from the integration of artificial intelligence (AI). It explores aspects such as the current legal implications, accountability mechanisms of AI actions and gives an analysis of the existing opinions on the legal status of artificial intelligence with several options for resolving the issue of its legal responsibility.

The study employs a doctrinal legal analysis combined with a comparative review of legal frameworks from selected jurisdictions. It also draws upon case studies involving AI-induced harm to illustrate key legal gaps and ambiguities.

Keywords

Artificial Intelligence, Legal Responsibility, Accountability, Legal Personality, Autonomous Systems

1. Introduction

The global technology industry is developing very fast given rise to a new era characterized by advanced Artificial Intelligence (AI) technology. Nowadays, humans have been able to realize ideas that were previously considered imagination only found in novels and movies. (Sumantri, 2019) The increasing prominence of artificial intelligence (AI) systems in daily life and the evolving capacity of these

systems to process data and act without human input raise important legal and ethical concerns.

Today's legal rules do not always fit well with digitalization and AI (Larsson & Bengtsson, 2021). People who create and use new technologies often say that the law slows down innovation and makes progress harder. On the other hand, many lawyers see AI and digitalization as new forces that influence behavior and sometimes compete with traditional law. Tech law is the term for a growing field where law is applied to digitalization and AI. As these technological solutions dominate an increasing part of the economy, society and everyday life, they engender new legal issues and conflicts. This rapid progress raises critical questions about AI control, accountability, and liability or responsibility. (Gregor N. 2003)

The responsibility of artificial intelligence systems is a complex problem, the complexity of which is due to their autonomy and the ability to self-learn. This factor makes it difficult to distribute the burden of responsibility among the various individuals involved in the creation and operation of artificial intelligence. At the same time, the modern development of artificial intelligence systems does not allow one to recognize their qualities of personality and, therefore, to apply to them measures of responsibility as to individuals and legal entities. (Lipchanskaya, Eremina, & Privalov, 2021)

Artificial Intelligence (AI) can be defined as the theory and development of computer systems that can complete tasks which typically require human intelligence, such as visual perception, speech recognition, decision-making, and language translation. (The New Oxford American Dictionary, 3rd ed.). While Autonomous AI generally refers to an AI system that can act or make decisions without ongoing human intervention or approval; It can also refer to AI's ability to operate with minimal or no real-time human oversight, adapt behavior as it learns or encounters new data, and make its own decisions (Stanford, 2025). In the other hand Legal Responsibility or Liability is considered to be: The obligation to answer for an act done, and to repair any injury it may have caused (The Law Dictionary, n.d.) It can be civil, arising from non-criminal acts like negligence, breach of contract, or defamation and gives rise to Civil Procedure whose purpose is to the enforcement of certain rights claimed by the plaintiff against the defendant. Criminal, arising for criminal actions considered offenses against the state or society and leads to punishment in a criminal proceeding to a wrongdoer (Accountancy, 2025)

This paper will examine the existing status on legal responsibility and the shifting patterns of legal liability for failures that result from the integration of artificial intelligence (AI). It explores aspects such as the current legal implications, accountability mechanisms of AI actions and gives an analysis of the existing opinions on the legal status of artificial intelligence with several options for resolving the issue of its legal responsibility.

2. The Notion of Legal Responsibility or Liability

The notion of legal responsibility or liability comes from the law of obligation which in civil Law treats tort: wrongful acts and contract: governing duties arising from agreements together. And in common law it divides obligations into contract, tort, and restitution. Tort liability stems from breaches of duties imposed by law, while contract liability arises from agreements or, more recently, conferred benefits or reliance-based losses.

Legal liability can be divided in 2 types of liability which are; civil liability which often arises from negligence or breach of contract, where one party may be held responsible for damages caused to another, and criminal liability which involves determining an individual's intent and culpability for committing a crime and result in punishment, such as imprisonment or fines.

2.1. Legal Responsibility in French Civil Law

French law of obligation, influenced by Roman law's principle of *neminem laedere* ("harm no one"), is mainly found from Article 1240 to Article 1241 of the Civil Code. In French civil law, the freedom of contract means that contracts are mainly formed through the parties' agreement, with their will being central. The Civil Code divides obligations into contractual (from agreements) and non-contractual (from law, quasi-contracts, or torts). Both are part of the broader law of obligations, usually based on fault.

Article 1240 of the French Code Civil (France, 1804/2023) state : « Tout fait quelconque de l'homme, qui cause à autrui un dommage, oblige celui par la faute duquel il est arrivé à le réparer » (France, 1804/2023, arts. 1240). This is the basic fault-based liability; "responsabilité délictuelle / extra-contractuelle" . It requires a fault, a damage "prejudice" , and a causal link.

Article 1241 states that : « Chacun est responsable du dommage qu'il a causé non seulement par son fait, mais encore par sa négligence ou par son imprudence. » This article clarifies that responsibility arises not only from intentional fault but also negligence or imprudence. Broadening the scope of fault.

And Article 1242 which state: « On est responsable non seulement du dommage que l'on cause par son propre fait, mais encore de celui qui est causé par le fait des choses que l'on a sous sa garde... » Establishes liability even when one is not the direct author of the harm but holds or controls a

“thing” which causes damage; also liability for damage caused by persons for whom one is responsible (parents, employers, etc.). Strict liability / presumption in certain cases.

2.1.1 Application on AI

Civil law, legal responsibility for AI-caused harm is a developing area with existing principles like negligence, requiring proof of fault and strict Liability, holding the deployer responsible regardless of fault being applied. The challenges include identifying who is liable (developer, operator, or owner) and applying traditional legal frameworks to autonomous systems that can act independently (British Columbia Law Institute, 2024).

Applying civil law to artificial intelligence brings several complicated challenges. One of the biggest issues is figuring out who should be held responsible when an AI system causes harm (Aldmour, 2025) . Because AI can act on its own, it's often hard to decide whether the blame should fall on the developer who created the system, the manufacturer who produced it, the operator who uses it, or the owner who benefits from it. According to article 1240 of the civile code a fault, a damage, and a causal link must be proved for a person to be liable of his actions, but in the case of AI lacking legal personality it is impossible to held it liable, so if it is to apply this principle, the manufacturer may likely be liable.

Another difficulty is proving causal link. AI systems are complex, and it's not always easy to trace how or why they made a certain decision. This makes it challenging to show a direct link between what the AI did and the damage that resulted. The causation link can trace the liability to the owner of this invention; Article 1242 establishes liability even when one is not the direct author of the harm but holds or controls a “thing” which causes damage. A company or an individual who own this invention may likely be liable in this case.

Bias in algorithms also creates serious problems. If an AI system is trained on biased data, it can continue or even worsen those biases, leading to unfair or discriminatory results. When that happens, it raises tough questions about who should be legally responsible for those outcomes (Ziemianin, 2021).

Lastly, there's the issue that AI itself isn't a legal person. Since it can't be sued or held accountable in court, the law has to find other ways to assign responsibility to people. This means that existing civil law principles might need to be adjusted, or new laws introduced, to make sure that someone is held accountable when AI systems cause harm.

2.2. Legal Responsibility in English Common Law and AI

English law requires consideration for contract enforceability, excluding gratuitous promises unless under seal and English tort law revolves around the duty of care, transitioning from trespass, conversion, and nuisance to negligence. Landmark cases expanded its scope: *Hedley Byrne v Heller* [1964].

2.2.1. Types of liability Under English Law

Under English law, liability for harm can fall under several different legal regimes, depending on the nature of the case and the relationship between the parties involved. One of the primary regimes is negligence, which is established when, a claimant must prove the defendant owes a duty of care which requires a sufficiently proximate relationship between the parties (Howarth, Chandler, & Behrendt, 2025); in case of AI this involves proving that a party failed to act with "reasonable care" in designing, training, or deploying the AI system. As stated in the case of *Donoghue v Stevenson* (1932) "You must take reasonable care to avoid acts or omissions which you can reasonably foresee would be likely to injure your neighbor." However, applying this principle to AI systems can be challenging, especially when the defendant, such as a manufacturer, developer, or supplier, no longer has control over how the AI system operates once it has been deployed.

In addition to this, proving causation might also be difficult if it is hard to identify how a failure occurred, where in the supply chain, and which party is responsible, particularly where the AI system has continued to develop after initial deployment by way of autonomous machine learning (Howarth, Chandler, & Behrendt, 2025).

Aside from negligence, Breach of contract also arise in this situation; contractual claims might arise under statutory warranties or implied terms in the case of AI if an AI system is not fit for purpose, of satisfactory quality, or it does not match the description. It is though debatable whether AI qualifies as a 'product' for these purposes. Furthermore, contractual clauses excluding or limiting liability may not cover AI and there remains significant risk for defendants seeking to rely on them in business to business (B2B) contracts as they will be subject to the test of reasonableness.

There is also Strict liability; in the context of Product Liability Directive 85/374/EC (PLD) which establishes a strict liability (no fault) regime enabling consumers to pursue a claim where a defect in a product has caused personal injury or property damage. The courts have, however, found that software which is not embedded in hardware does not constitute a 'product'. As such, there is uncertainty as to whether intangible code underpinning an AI process would be a 'product', leaving a gap in the law.

2.2.2 Criminal Responsibility

Criminal liability involves determining an individual's intent and culpability for committing a crime. When a person violates a criminal law (theft, assault, fraud), they are held criminally liable and the aim is punishment, such as imprisonment or fines. Criminal liability pertains to the legal responsibility an individual or entity bears for actions that violate criminal laws and regulations established by the government. Crimes are generally offences against society as

a whole and the government, represented by prosecutors, initiates criminal proceedings.

The purpose of criminal liability is to punish the wrongdoer for violating laws that are intended to protect public safety and order (Agrawal, 2023). Criminal liability involves around *Mens Rea* which is the intent to commit a crime, which is crucial for determining culpability and *Actus Reus* which is the physical act of committing the crime.

3. Regulation of AI Legal Responsibly

Artificial intelligence is rapidly transforming various aspects of our lives, including the economy, healthcare, and education. Artificial intelligence is defined inconsistently. Sometimes it is perceived widely as a field of science primarily related to computer science and robotics. In a narrower sense, artificial intelligence is the ability of an IT system to correctly interpret external data, to learn from it, and to use the experience gained in this way to accomplish specific tasks. This ability includes the capacity to flexibly adapt to external conditions (Wang, 2008, p. 362; Kaplan & Haenlein, 2019, pp. 15 - 25; Kok et al., 2002, p. 1095 ff). As AI technology continues to advance, concerns have been raised about its potential impact on society and the need for regulation to ensure its responsible development and use.

Furthermore, Machine Learning is a technique focusing on developing algorithms and systems that can learn from data and improve their performance over time, and is used in applications such as recommendation systems, fraud detection, and credit scoring. In addition, Robotics field is consisting on improving robots' tasks autonomously, such as assembling products, exploring space, and assisting in healthcare (Russell & Norvig, 2010).

AI has a wide range of applications in many different industries and domains, and its potential uses are only limited by our imagination and the availability of data and computing power. Therefore, the discussion of civil liability of AI is an important topic because it tackles many essential aspects of our life. Concerning legal liabilities, AI is increasingly integrated into various fields, so there is a need to determine who should be held legal responsible in case of damages caused by AI systems.

In the present legal state, with the current level of technological development, there are no grounds for granting legal personality to artificial intelligence. An artificial intelligence system cannot compensate someone to whom it causes harm. It does not have means to pay damages. It does not own assets that can be seized and liquidated to satisfy a judgment. Unlike humans and corporations, software is not a person in law over whom a court can have jurisdiction. As such, it cannot be ordered by a court to pay damages for harm it may cause. Compensation on the basis of tort law for harm caused by artificial intelligence depends on some human or

corporate entity being legally liable to compensate the person harmed (Klar & Jeffries, 2017; Osborne, 2020). Lack of legal personality therefore results in the inability to bear responsibility for one's own deeds. This means that if the artificial intelligence currently existing causes damage, another person should be responsible for it. The concept of bearing responsibility for other people's deeds, as already indicated above, is not foreign to civil law and Common. It was reflected in both the French Civil Code and English rules on tort liability. However, in this regard it is necessary to analyze which rules of tort liability can be applied in the event of damage caused by artificial intelligence, and who should be liable for such damage.

The legal framework for liability can vary by country and jurisdiction, some general principles that can be applicable are: Strict liability under which, the person or entity responsible for deploying the AI system is held strictly liable for any harm caused by the system, regardless of whether or not they were at fault. This approach is commonly used in product liability cases, and can provide a means of compensation for victims without having to prove fault or negligence on the part of the defendant. Negligence under which the person or entity responsible for deploying the AI system can be held liable for damages caused by the system if they were negligent in their development or deployment of the system.

3.1. In the French Legal System

As mention Above, in France, civil liability for AI is governed by the Civil Code that includes Tort Law particularly article 1240 to 1242 of the Civil Code. If a person or entity deploys an AI system that causes harm due to their fault or negligence, they may be held liable for damages. AI systems in certain sectors, such as healthcare (the French Public Health Code) and transportation (the French Road Traffic Act). It is important to note that the legal framework for the liability of AI systems is still evolving in France and other countries. As AI technology continues to develop and become more prevalent, it is likely that the legal framework will continue to evolve as well. France has already made some legal amendments targeting misuse of AI outputs for example deepfakes. Article L. 226-8 of the French Penal Code was amended in May 2024 to criminalise distributing AI-generated content using someone's image or voice without consent, unless the AI use is clearly indicated. Penalties vary depending on seriousness and whether sexual content is involved. Additionally there are proposals (e.g. Bill 1630) to amend the French Intellectual Property Code to deal with AI-created works, such as clarifying rights in works generated by AI, or rights of authors whose works were used to train AI. But these are still under debate and not yet final; and finally, the French Bill 1630 is set to establish a copyright framework for artificial intelligence (Intellectual Property Code).

3.2. In England and USA

In the United States, there is currently no comprehensive federal law governing the civil liability of AI. However, several States have enacted laws that address specific aspects of AI liability. For example, California has enacted different laws, such as the California Bot Act (Cal. Bus. & Prof. Code §§ 17940–17943, 2019), users interacting with AI must be informed of automated activity; this prohibits any person from using a bot online to communicate or interact with a person in California with the intent to mislead the person about the bot's artificial identity for the purpose of knowingly deceiving the person about the content of the communication in order to incentivize a commercial transaction or influence a vote in an election. Similarly, some states have enacted laws that address the liability of employers for harm caused by their employee's use of ai such as Illinois HB 3773.

In England, on the other hand, the law governing the civil liability of AI is also evolving. In 2020, the UK government commissioned a review of the legal and regulatory framework for AI, which recommended the creation of a new legal framework for AI liability. The UK AI Regulation (White Paper 2023) focus on Safety, security, Transparency, fairness, Accountability and Contestability. Different legal cases were also settled under this topic. The case of *Moffatt v Air Canada* 2024 which established the responsibility for misleading information provided by the chatbot on the commercial website to the company Air Canada; Also in the case of *Quoine Pte Ltd v B2C2 Ltd* 2020 SGCA where The Singapore Court of Appeal (SGCA) has issued a landmark ruling on a breach of contract case involving the autonomous algorithmic trading of digital tokens. damage caused by the use of Automated trading software for trade of crypto assets. The Court held that the "Disputed Trades" executed by B2C2's algorithm were legally binding contracts, and Quoine was in breach of contract when it unilaterally cancelled or reversed them. The defence of unilateral mistake failed because Quoine did not prove that it had the required knowledge that B2C2 was operating under a mistake. so algorithmic trades are enforceable contracts, and unilateral mistakes cannot void them unless the non mistaken party knowingly exploits the mistake.

3.3 Under EU Law

In April 2021, the European Commission proposed the first EU artificial intelligence law, establishing a risk-based AI classification system. AI systems that can be used in different applications are analyzed and classified according to the risk they pose to users. The different risk levels mean more or less AI compliance requirements.

Parliament priority (European Parliament, 2020) was to make sure that AI systems used in the EU are safe, transparent, traceable, non-discriminatory and environmentally friendly. AI systems should be overseen by people, rather than by automation, to prevent harmful outcomes. Parliament also

wanted to establish a technology-neutral, uniform definition for AI that could be applied to future AI systems.

The new rules establish obligations for providers and users depending on the level of risk of AI risk qualification. There are Unacceptable risk which are Banned AI applications in the EU including: Cognitive behavioural manipulation of people or specific vulnerable groups: for example voice-activated toys that encourage dangerous behaviour in children. High risk AI involving AI systems that negatively affect safety or fundamental rights to be considered high risk (European Parliament, 2020).

4. The Future of AI Legal Responsibility

AI systems possess the ability to make autonomous decisions, provide recommendations, and perform tasks, introducing risks and raising accountability questions when negative outcomes occur. However, determining who should be held liable is challenging due to the unique characteristics of AI systems, including their complexity, lack of transparency, and involvement of multiple stakeholders. (European Parliament, 2023)

The European Union is seen as one of the “furthest along in developing a comprehensive legislative response to governing AI.” In an effort to regulate AI, the European Commission proposed a regulatory framework for AI, the Artificial Intelligence Act (AI Act). The AI Act classifies AI systems based on the risk presented to users and uses that risk level to determine the amount of regulation (European Parliament, 2023). According to the framework, “AI systems that negatively affect safety or fundamental rights will be considered high risk.” AI systems that assist lawyers “in legal interpretation and application of the law” fall into the high-risk category. If an AI system is marked as high risk, it must be registered in an EU database and will be assessed before entering the market. If it makes it to the market, it will be reassessed “throughout [its] lifecycle.” By assessing and reassessing AI systems that are marked as “high risk,” the AI Act assures that the systems are consistently meeting quality management and process requirements.

Like the EU, the United Kingdom is taking a risk-based approach to the regulation of AI systems (Department for Science, Innovation & Technology, n.d.) The United Kingdom regulation focuses on context and proportionality. A focus on context and proportionality allows regulators to analyze the risk in the context and environment the AI system is used.

China recently enacted the Interim Measures for the Management of Generative Artificial Intelligence Services (Department for Science, Innovation & Technology, n.d.). The Measures hold providers of generative AI services legally responsible for the sources that generative AI systems use and pre-training data (Huang, Mozur, & Creemers, 2023).

Providers are also liable as the producers of the content the system generates.

United States does not have a national law to regulate AI (Barrett, 2023). In lieu of national regulation, state courts have started to address the issue of AI in the courtroom (Kirk, McDonough, & Heintz, 2023). Courts are issuing opinions about the use of AI in the form of Rule 11(b)(2) sanctions, court orders, and local rules (Mangan, 2023). In Texas, Judge Brantley Starr adopted a policy on the use of generative AI (U.S. District Court for the Northern District of Texas, 2023). Judge Starr adopted this policy.

4.1. The shared Liability

There are several challenges in defining and attributing responsibility for harm caused by AI systems. Some of the main challenges include: complex decision-making, attribution of responsibility, lack of transparency and cultural and ethical norms. As for Complex decision making, the AI systems often make decisions that are complex and opaque, making it difficult to determine how a particular decision was made and who is responsible for that decision (Birkett, 2019). Responsibility for harm caused by AI can be distributed among several parties including companies for owning the system (Open AI); developers for flawed algorithms or insufficient testing, manufacturers for hardware defects in AI-enabled devices, deployers or operators for misuse or lack of oversight, data providers for supplying biased or inaccurate data, and third-party integrators who combine AI components into broader systems (Jobin, Ienca, & Vayena, 2019).

4.2 The question of Autonomy

The concept of granting legal personality to artificial intelligence is widely discussed in legal and philosophical literature. At the European Union forum initiatives are being taken to consider the possibility of applying the current legal regulations of the member states in relation to artificial intelligence and to formulate conclusions as to the need for legislative changes (inter alia European Commission, 2019).

These initiatives expressed the view that granting legal personality to artificial intelligence is unnecessary, since the responsibility for its actions should be borne by existing persons (European Commission, 2019, p. 4). According to these assumptions, granting legal personality to artificial intelligence does not seem beneficial due to the lack of a concept regarding the principles of liability (Ministerstwo Cyfryzacji, 2018), the legal personality of artificial intelligence should be discussed. Liability for AI actions for now should be attributed to its creators, operators or possible end users.

4.3. The question of Explainability

Explainable AI (XAI) is often offered as a partial technical fix for ascribing liability (An Act respecting the protection of personal information in the private sector, CQLR c. P-39.1, 2021). The assumption is that by providing explanations of

how an AI arrived at a decision after it happened, one can identify faults or at least see whether a developer or end-user missed critical warning signs (The Economist, 2019). But explainability by itself is not good enough. A model might highlight which input features or “weights” influenced a decision, but that does not always reveal the full reasoning process or broader design flaws. Focusing on an individual explanation can also distract from systemic issues and may deflect attention from broader organizational responsibilities, such as managers pressing for rushed rollouts without adequate safety testing or product teams overlooking robust adversarial testing protocols. Realistically, the black-box nature of modern machine learning will persist, even with sophisticated explainability tools, so that blame can still be elusive (Stanford, 2025).

5. Conclusion

Under current law, Artificial Intelligence cannot bear legal responsibility, as it lacks intent and moral awareness. Liability remains with the humans or corporations that design and control these systems, under laws.

However, as AI becomes more autonomous and influential in society, future legal reforms may need to reconsider how accountability is defined, ensuring justice keeps pace with technological evolution.

One approach to tackling liability in AI will be to adapt existing legal principles and establish clear guidelines for AI developers, users, and manufacturers (Kemp, 2020). This may involve defining specific standards for AI safety and reliability, establishing regulatory bodies, and mandating transparency and accountability measures in AI development and deployment.

Another perspective will be to shift the responsibility of liability to the entities responsible for designing, training, and implementing AI systems (Birkett, 2019). This view considers AI as a product or service, thereby making the manufacturer or developer liable for any harm caused by their AI systems.

Additionally, comprehensive insurance mechanisms tailored to AI-related risks could provide financial protection and facilitate compensation for damages resulting from AI systems. It is crucial to foster interdisciplinary collaboration among legal experts, policymakers, technologists, and ethicists to comprehensively address the challenges associated with civil liability in AI. Ongoing dialogue and cooperation (UK Government, 2020) can lead to the development of appropriate legal frameworks, ethical guidelines, and responsible practices that promote the benefits of AI while mitigating potential harm.

Overall, civil liability in AI is a multifaceted issue that necessitates careful consideration. By proactively addressing these concerns, we can promote the responsible development

and deployment of AI technologies, ensuring their positive contribution to our lives and communities while minimizing potential harm.

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